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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/712,420

11/13/2000

Michael J. Daneman

ONX-109

9691

7590

12/29/2003

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EXAMINER

CULBERT, ROBERTS P

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/712,420

Applicant(s)

DANEMAN ET AL.

Examiner

Roberts Culbert

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/3/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-16, 23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-16 and 24 is/are allowed.
- 6) ☐ Claim(s) 1-9, 11-13 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 12/3/03 have been fully considered but they are not persuasive.

Applicant has argued that "upon close inspection of Bashir it is apparent that 142 is not a structural layer. Instead it is one of the structures defined by the etch stop trenches. Therefore, the Applicants submit that structure 142, which the Examiner refers to as a structural layer, is, in fact, a portion of the device layer. The Applicants submit that Figures 9 and 11 of Bashir clearly show that the structure 142 has no structural layer formed on it. Thus, Bashir does not describe forming any structural layer proximate one or more exposed areas of the device layer as presently recited in claim 1."

The argument is not persuasive because the structural layer in the invention of Bashir (142) is not considered a portion of the device layer (See surrounding layer marked "Buried Oxide" in Figures 1-7), which is made of a different material. Therefore, Bashir does describe forming a structural layer (142) proximate one or more exposed areas of the device layer as presently recited in claim 1.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 11-13, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent 5,747,353 to Bashir.

Referring to the figures, Bashir teaches a method for a controlled release of structures comprising: forming one or more trenches (121) in a layer of device material (See surrounding layer marked "Buried Oxide" in Figures 1-7); filling one or more selected trenches with an etch-stop material (polysilicon) to form one or more etch-stop trenches (figure 3); defining one or more structures (142)

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between the selected trenches; and etching one or more portions of the device layer (See surrounding layer marked "Buried Oxide" in Figures 1-7) between the etch-stop trenches to release the structures, wherein the etching does not etch the etch-stop material (figure 8). Bashir further teaches forming a structural layer (142) proximate one or more exposed areas of the device layer (figure 6).

Regarding claim 2, Bashir also shows depositing a layer of etch-stop material (136 and 140) over the surface of the device layer (figure 5).

Regarding claim 3, Bashir teaches forming one or more openings in the etch-stop material (figure 6).

Regarding claim 4, the etching undercuts one or more portions of the etch-stop material (figure 6).

Regarding claim 5, the layer of device material is disposed between two layers of etch stop material.

Regarding claim 6, the device layer includes one or more layers of a silicon-on-insulator (SOI) substrate.

Regarding claim 7, the device layer is a layer of silicon glass or oxide.

Regarding claims 8 and 9, the etching one or more portions of the device layer may include a wet etch process (Col. 6, Lines 55-57), and/or a dry etch process (Col. 6, Lines 20-23, 30-35, and 45-50).

Regarding claim 11, the etch process does not etch the structural layer (figure 8).

Regarding claims 12 and 13, Bashir teaches that the etch process releases one or more portions of the structural layer (figure 8).

Regarding claim 23, the structural layer (142) is protected by one or more etch-stop layers (figure 6).

#### ***Allowable Subject Matter***

Claims 14-16 and 24 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

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Regarding claim 14 and 15, the prior art of record fails to show or render obvious a method for a controlled release of structures comprising: forming one or more trenches in a layer of device material, filling one or more selected trenches with an etch-stop material to form one or more etch-stop trenches, defining one or more structures between the selected trenches, forming a structural layer proximate one or more exposed areas of the device layer, and etching one or more portions of the device layer between the etch-stop trenches to release the structures, wherein the etching does not etch the etch-stop material, wherein the structural layer includes one or more structures that are formed directly on top of an etch-stop layer.

Regarding claims 16 and 24, the prior art of record fails to show or render obvious a process for forming structures comprising: forming one or more trenches in a layer of device material; filling one or more selected trenches with an etch-stop material to form one or more etch-stop trenches; masking a surface the layer of device material to expose one or more selected areas of device material that border one or more of the etch-stop trenches; and forming one or more structures on one or more of the selected areas of the device material that were exposed; and etching one or more of the selected areas of the device layer to release the structures, wherein the etching does not etch the etch-stop material.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

R. Culbert



GREGORY MILLS  
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